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"Can the U.S. Electric Grid Take Another Hot Summer?"
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My name is Phyllis E. Currie. I am the General Manager of Pasadena Water and Power of the City of Pasadena, California ("Pasadena"). Pasadena is a municipal electric system located geographically within the Los Angeles Basin and electrically within the Control Area of the California Independent System Operator Corporation ("CAISO"). In addition to distributing electricity to over 61,000 (metered) customers, Pasadena both buys power from and sells power to other participants in the California and regional wholesale markets. Pasadena is both a transmission customer of the CAISO and a Participating Transmission Owner ("PTO"), meaning we have transferred operational control of our transmission assets to the CAISO.

I also serve as the President of the Southern California Public Power Authority ("SCPPA"), a joint powers authority of eleven municipal electric systems and one irrigation district in Southern California, that collectively serve over 2 million customers. Beginning in 1980, SCPPA members banded together to jointly invest in generation, transmission, and renewable energy projects that most SCPPA members would not have been able to undertake individually.

Today I would like to discuss three areas which are interrelated and relevant to the topic of reliability in Southern California, both today and moving forward:

- First, I would like to take a few moments to describe Pasadena and SCPPA and the investments in generation and transmission that we have made to ensure that our customers have adequate and deliverable power to meet their needs.

- Second, I would like to emphasize the need for close coordination among the CAISO, Load-Serving Entities (LSEs) like Pasadena, and regulators during this upcoming summer in order for all to ensure that the expectations of our customers for reliable service are met. (A LSE is an entity, which may be either publicly-or investor-owned, that is obligated by law or contract to provide electric service to end-use customers.)

- Third, I would like to sound a cautionary note going forward. Pasadena and other members of SCPPA are concerned that California may be headed down a path that erodes, rather than ensures the clarity, simplicity and stability required to encourage investment in generation and transmission necessary to serve customers reliably and at a reasonable cost. Our concerns arise from proposed changes to the California market structure, called the

Market Redesign and Technology Upgrade ("MRTU"), currently being considered by the Federal Energy Regulatory Commission (FERC).

Reliability Through Assets – A Commitment to Investment by Pasadena and SCPPA Members

Historically, Pasadena, other SCPPA members, and indeed all of the municipal power community in California (which collectively serves 25-30% of California's electric retail load) made the determination that, while they are part of a larger and interconnected electrical grid that must work in harmony to ensure reliable and economic operation, they could not rely on others to meet the expectations of their customer-owners for reliable and reasonably priced power.

Pasadena has 200 Megawatts (MW) of generating capacity within the City itself, which represents approximately two-thirds of Pasadena's peak requirements. This includes an $82 million investment in 2004 to add 90 MW of peaking capacity. Pasadena makes its unused capacity available to the CAISO to augment state energy supplies.

Through SCPPA, and in conjunction with other municipal power systems, Pasadena has invested in a share of generation, transmission, and long-term natural gas resources. (See attachment B for map of SCPPA projects.) These projects include:

- the **Southern Transmission System**, which brings power from the Intermountain Power Project (IPP) in Utah (including 107 MW contracted by Pasadena) and other power resources in Utah and the Mountain states to Southern California;

- the **Palo Verde Nuclear Project** in Arizona, from which Pasadena is entitled to 10 MW, and;

- the **Pacific Northwest DC Intertie** transmission line from the Northwest to Southern California, as well as the **Mead-Adelanto and Mead-Phoenix** transmission lines from the Southwest to Southern California, which are used to import firm power from Hoover Dam in Nevada, Palo Verde in Arizona, and the Bonneville Power Administrations in Oregon as well as power from other resources in the Northwest and Southwest.

SCPPA Projects

More recently, Pasadena has invested in a number of SCPPA projects, which added both natural gas-fired and renewable energy supplies:

- **Magnolia Power Project, located in Burbank.** This 310 MW natural gas-fired, combined-cycle combustion turbine unit is unique in several respects, such as: it is "load-centered" generation located in an urban environment; it obtained air quality permits to operate in the Los Angeles Basin; it is designed to use treated effluent from the City of Burbank's wastewater treatment plant; it has zero liquid discharge from the plant site; and each participant is allowed to individually schedule its portion of the project output. The

project was chosen as the "Power Plant of the Year" by Platt's Power Magazine in international competition in 2005.

- **Natural Gas Investments**. These investments include a recently completed $300 million purchase of natural gas reserves in Pinedale, Wyoming to ensure a reliable fuel supply for the Magnolia Project at stable prices not subject to market volatility.

- **Renewable Projects.** In addition to the Azusa Hydroelectric Plant and Pasadena's share of the output from the Hoover Dam, Pasadena has added to its renewable portfolio by participating in the following SCPPA projects:

    1. **High Winds Project.** Pasadena contracted for a 6 MW share in the High Winds Generation facility in Solano County in Northern California. The plant includes 81 state-of-the-art Vestas V80 windmills, lining the ridge tops of the Montezuma Hills.

    2. **Gould Geothermal Project.** Through a 25 year agreement developed by SCPPA members, Pasadena will obtain a 3 MW share of a geothermal project in California's Imperial Valley.

    3. **Chiquita Canyon Landfill-Gas-to-Energy Project.** Through a 20 year agreement, Pasadena will obtain a 2.2 MW share of a project in Valencia, California which will capture gases produced from decomposing matter from a landfill and convert it to energy.

In total, this diverse portfolio of generation, much of it located within the constrained area of Southern California, combined with transmission investments, has enabled Pasadena and other SCPPA members to meet the needs of our customers and contribute to overall system reliability.

And we are not done. Pasadena and SCPPA are examining additional transmission and generation investments. For example, SCPPA is working to complete an upgrade to the Southern Transmission System (STS) Project that will be used to transport additional resources, including renewable energy resources, from Wyoming and Utah into Southern California.

In addition, SCPPA along with two of its members (IID Energy and Los Angeles Department of Water and Power (LADWP)) are involved in the development of a new 1,200 MW transmission line from the Imperial Valley of California to the Los Angeles Basin, which is more commonly referred to as the "Green Path" Initiative. This new line will deliver geothermal, wind, and, potentially, solar power energy into the Los Angeles Basin and support overall grid reliability in Southern California.

SCPPA, through its joint membership, is also in the process of developing approximately 600 MW of renewable energy pursuant to its latest solicitation for offers. This new renewable energy will help SCPPA members meet their respective renewable portfolio standards (RPS). SCPPA members have an ongoing commitment to renewable energy.

I emphasize our history of investment and commitment to future infrastructure development not only to tout our own accomplishments a bit, but also to make a point. These investments are possible and desirable because of the clarity of purpose and rules under which we have operated historically. Our purpose as community-owned utilities is, simply, to provide reliable low-cost power to our customers. Simplicity, clarity, and stability of the market rules and the overall industry climate are what draw reasonably priced capital to the industry and help lower overall costs to consumers in this capital intensive business. As I will discuss in more detail below, Pasadena and other SCPPA members are concerned that proposed changes to the market design will erode those foundational elements for prudent and sound infrastructure investment.

Summer 2006

First and foremost, let me emphasize that when it comes to real-time grid operation, all market participants have the obligation to work closely together to ensure the greatest level of reliability that can be provided by the system in place. As part of the CAISO Control Area, Pasadena recognizes the CAISO's responsibility to ensure short-term grid reliability and works closely on several levels with the CAISO to maximize coordination of system operations. For example, Pasadena participates in regularly scheduled operations calls held by CAISO during times of system stress. Furthermore, as a member of the Western Electricity Coordinating Council (WECC), Pasadena adheres to the generally-accepted industry standards and practices, and we support WECC's expeditious implementation of regional reliability standards, as required under the Energy Policy Act of 2005 ("EPAct 2005").

Individually, Pasadena has taken proactive steps to enhance readiness for this summer. In addition to our investments in generation and transmission, we have tailored our power plant maintenance schedules to promote the maximum availability of our units to meet peak demands. We have initiated proactive programs with our large customers to prepare for summer conditions. As directed by our City Council, Pasadena has invested in energy efficiency and conservation programs targeted at reducing our peak demand, which is directly relevant to ensuring reliable operation during stressed conditions. These investments include unique "energy storage" technologies that shift air conditioning loads to off-peak periods. Commercial and residential air conditioning loads are a large driver of our system peak and the California peak, particularly in warmer inland areas. In short, Pasadena has worked proactively to prepare for summer 2006, and we look forward to continued coordination with the CAISO to ensure the maximum level of operational reliability possible.

MRTU - A Cautionary Note

I have reviewed FERC's *Summer Energy Market Assessment 2006* ("Assessment") which prompted this hearing, and I would like to offer some observations about the market descriptions and investment issues addressed in that report. In my experience as the former Chief Financial Officer (CFO) of LADWP, what attracts capital investment in generation and transmission are clear, simple and stable rules that investors understand and that reduce their risks.

What I see in the Assessment are references to a number of "market design" mechanisms, such as "scarcity pricing;" "real time models to better reflect local prices;" "improved modeling of gas turbines ...[to] improve real-time price accuracy;" and "dispatch changes to decrease uplift," to name a few. I do not believe the Commission intended to suggest that these mechanisms are solutions to

reliability problems, but I must observe that these types of market minutia do not build generation and transmission. While I have not focused on the specific problems of other regions of the country that have adopted so-called "Day Two" market designs, I am concerned that if we in California follow suit and embrace similar complex market mechanisms, we will lose sight of the fact that clear, simple and stable rules are what attract investment capital.

I will reiterate that, while Pasadena and SCPPA members remain committed to working with the CAISO to maintain reliable grid operation, we are concerned that proposals by the CAISO at FERC to change market rules will erode the very stability and certainty on which Pasadena has relied to build generation and transmission. These market rule changes, in the MRTU as proposed to the FERC, will discourage development of much needed transmission infrastructure and generating resources and will inhibit efficient use of all available resources on a regional basis. In a nutshell, the MRTU proposal does not permit a reasonable degree of cost predictability, and it will not facilitate market transactions among the sub-regions of the Western Interconnection.

Municipal systems and all other potential investors in generation and transmission resources face the difficult task of evaluating the potential risks and benefits of such investments. Clearly it is not humanly possible to eliminate all risks. But the MRTU proposal increases risks for many market participants and fails to take reasonable steps to mitigate them.

As a practical matter, buyers and sellers of energy in California must rely upon the CAISO for transmission service. But under the currently effective market structure, buyers and sellers may arrange for purchases and sales on a bilateral basis and simply arrange for delivery by the CAISO. Under the proposed MRTU Tariff, however, all transactions scheduled over the CAISO Controlled Grid will have to be settled through the CAISO's complex market structure. This mandatory buy/sell nature of the MRTU market structure will expose all market participants to expanded and inescapable exposure to financial risks.

For Load Serving Entities ("LSEs") within the CAISO Control Area, such as Pasadena, there will be no way to avoid the expanded risks. For sellers and buyers outside the CAISO Control Area, the expanded risks will either discourage transactions that require transmission over the CAISO Controlled Grid or increase the costs for such transactions as a result of increased risk.

The MRTU proposal currently includes general provisions for Congestion Revenue Rights ("CRRs") that have the intended purpose of providing a financial hedge for LSEs against congestion costs (*i.e.* charges that will be applied when the transmission grid is not capable of accommodating all desired transactions). Effective CRRs are absolutely critical to the ability of LSEs to manage the expanded price risks described above. Unfortunately, the MRTU CRR proposal in its current state provides no assurance that CRRs will provide an effective hedge against the expanded price risk faced by LSEs.

The FERC previously required the CAISO to provide actual CRR allocations to market participants simultaneous with the filing of the MRTU Tariff. *See Calif. Indep. Sys. Operator Corp*., 105 FERC ¶ 61,140, at P 172 (2003) ("we will require that the CAISO file detailed information on the proposed first year allocation when it files its proposed tariff instituting the CRR allocation method"). The CAISO has not complied with that directive. The CRR provisions in the MRTU Tariff provide merely

a theoretical framework that does not allow LSEs to evaluate in any concrete way the likely impact of the MRTU market design on their procurement plans and costs.

As mentioned above, our primary goal is to provide reliable and low-cost power to our customers. What these risks and increased transmission costs mean for cost-based entities such as Pasadena, and other public power utilities, is increased prices for ratepayers.

Moreover, the CRR process as proposed by the CAISO fails to provide any mechanism for long-term transmission rights (LTTRs) to facilitate long-term resource commitments. Indeed, explicit limitations on the extent of grandfathering for CRRs from year to year make it impossible for LSEs to count on CRRs to hedge long-term resource commitments. *See* MRTU Tariff § 36.8.3.5. The absence of any mechanism for long-term transmission rights is inconsistent with the requirements of Section 1233(b) of EPAct 2005 (amending Section 217 of the Federal Power Act) and with the FERC's previous and repeated directives to the ISO. *See Pacific Gas and Elec. Co., et al.*, 80 FERC ¶ 61,128, at p. 61,427 (1997) (directing the ISO in 1997 to make long-term firm transmission rights "available to all market participants in a non-discriminatory manner as soon as possible."); *Cal. Indep. Sys. Operator Corp.*, 87 FERC ¶ 61,143, at p. 61,572 (1999).

FERC issued on February 2, 2006 a draft rule to implement the long-term transmission rights ("LTTR") provisions of EPAct 2005 and we believe it is a good, strong rule that fulfills Congressional intent. However, the CAISO not only has failed to comply with the FERC's previous directives, but it also has asked the FERC to defer any requirement to provide long-term transmission rights pursuant to the new rule until at least one year after implementation of the MRTU proposal (now optimistically projected for November 2007).

The FERC, a number of state regulatory commissions, including the California Public Utilities Commission and local regulatory authorities all have devoted significant attention in recent months to the development of Resource Adequacy programs to encourage or require LSEs to procure power supply resources sufficient to meet the needs of their customers. The inability to predict future transmission costs or arrange for long-term transmission rights is a major impediment to fulfilling resource adequacy objectives.

Municipally-owned LSEs are not the only ones concerned with the degree of uncertainty involved in long-term resource commitments. Southern California Edison Company ("SCE") and the Pacific Gas and Electric Company ("PG&E"), the largest LSEs in California, also submitted comments to FERC on the MRTU proposal that highlighted concerns regarding the absence of detailed CRR provisions and provisions for long-term transmission rights. Congress spoke to the issue of long-term transmission rights in the EPAct 2005, and its message was clear. The FERC should not accept the CAISO's MRTU proposal unless and until the CAISO provides information on actual, final CRR rights and a mechanism to establish long-term transmission rights.

The MRTU proposal also intensifies on-going concerns with "seams" between the CAISO markets and other markets in the Western region. The term "seams" refers to differences in market designs and operating procedures that make it difficult to arrange for desired energy transactions among the various sub-regions in the West. There have been continuing seams problems between the CAISO and other sub-regions in the West since the CAISO began operations in 1998. Unfortunately, the MRTU

proposal does nothing to minimize the seams problems and, in fact, includes features that will make them worse.

For example, the MRTU proposal includes a complex series of Day Ahead, Hour-Ahead Scheduling Process ("HASP") and Real Time market processes with scheduling timelines that differ from the prevailing practices in the rest of the Western Interconnection. Neighboring control areas, consistent with common industry practices, allow schedule changes up to twenty or thirty minutes before the active scheduling hour and even into the active scheduling hour.

Although the deadline for scheduling in the HASP under MRTU will be closer to the active scheduling hour than the deadline currently in effect under the CAISO's existing market design, it still will be at least forty-five minutes earlier than the prevailing practice in the remainder of the Western Interconnection. This has the effect of discouraging transactions among sub-regions in the West and increasing the prices for transactions that do occur. Indeed, several suppliers in areas outside the CAISO Control Area, including the Bonneville Power Administration, identified features of the MRTU market design that would discourage transactions with entities within the CAISO Control Area.

In addition, limitations in the settlements and bidding processes included in the MRTU proposal will both restrict and increase the risks associated with transactions between LSEs within the CAISO Control Area and potential buyers and sellers in other sub-regions of the West. If an LSE in the CAISO Control Area finds that it needs additional resources on an Hour Ahead basis, it will face a significant price risk for importing a resource from outside the Control Area. Under the complex MRTU settlements proposal, the import will be paid the Hour Ahead Locational Marginal Price ("LMP") at the import point, but the LSE arranging for the import will pay a different price for the load to be served by the import. This imposes additional price risks on the LSE that is attempting to procure sufficient resources to meet its customers' requirements.

These concerns are among those that prompted twelve U.S. Senators to write recently to the Chairman of the FERC, Joe Kelliher, expressing concerns about the CAISO's market redesign proposal and requesting the Commission to "proceed cautiously and provide a thorough vetting of the issues raised," in particular, features such as centralized, bid-based dispatch of generation, locational marginal pricing for supply and financial rights in lieu of physical rights to manage congestion. The Senators encouraged FERC to "consider the impacts not only to California, but to those throughout the West." (See attachment B for a copy of the June 26 Senate letter to FERC.)

Conclusion

Pasadena has a long history of investment in generation and transmission, we have a strong working relationship with the CAISO to ensure system reliability, and we will continue to work cooperatively to keep the lights on. However, going forward, we believe that many of the market design mechanisms proposed in the CAISO's MRTU are ill-conceived, will not promote investment in generation and transmission in California, and may seriously hinder reliability of the Western grid.

Thank you for the opportunity to appear before the Subcommittee to express my views. I look forward to answering any questions you may have.